purposes. Many older buildings are inflexible and inherently unsuitable for today's library needs. This results in inefficient operation and space allocation. Some libraries might improve their efficiency through reconfiguration, but most older and sequentially constructed buildings will never approach the efficiency ratios of newer libraries.

### Operation and Maintenance Cost Penalties

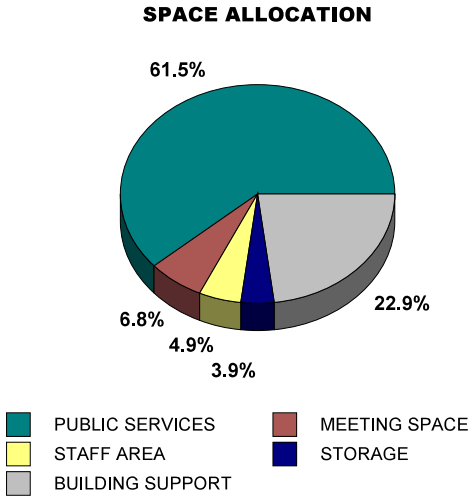
The variety of governance structures made it impossible to identify operation and maintenance costs on any consistent basis. It seems likely, however, that many Utah public libraries are paying an ongoing penalty to operate inefficient and outdated systems in buildings that were not designed to meet current energy or performance standards. Many older libraries have original single-pane glazing, little or no insulation, and energy-inefficient lighting and equipment that may date from the 1940s or earlier. Librarians in facilities that are 15-20 years old or older complain of the difficulty and high costs involved in obtaining replacement parts and service for old fixtures and equipment.

## IDENTIFYING FUTURE NEEDS

Determining future space needs, as McCabe explains, is not a simple matter of "taking a decimal formula and multiplying it by the increase in population. . . . Community needs may have changed; the population and its characteristics may have changed. New formats, new technology, and new ways of providing service must all be considered."[35]

To estimate how much space libraries might need in 2010, this study considered four questions:

- The amount of space needed to provide current levels of service for the anticipated 2010 population.




- The amount of space needed to remedy existing library deficiencies.
- The amount of space needed to add new programs, services, and functions.
- The potential impact of electronic technologies on space needs.

## ASSUMPTIONS ABOUT SPACE NEEDS

In answering these questions, the study team made a series of assumptions:

- That this study would calculate the areas and costs for the full range of options available for each of Utah's 107 libraries, including those that have already made design and construction plans, those that assume they will not have funds for facility expansion, and those that have recently made major improvements.
- That in estimating future needs and costs, this study would use figures based on the level of construction and the provision of services in Utah's newest and best libraries.

- That the study team would norm the assumptions used to estimate functional space allocations for providing new services and correcting deficiencies. Figures are based on the recommendations outlined in the American Library Association's *Building Blocks for Library Space* and the Wisconsin planning guidelines.[36]

- That not every community will choose or be able to support the level of development represented by the upper range of these numbers.

- That it is beyond the scope of this study to identify the possible variations and decisions on a community-by-community basis, or to address plans in progress at individual libraries or systems.

- That no attempt could be made to continuously update data to reflect changing conditions over the course of the study. Thus, for example, the recent Lehi addition was not included because construction began after the study site-visit had been completed. Usage data reflect the statistics published in the 2000 annual report of the State Library Division.

- That it was neither possible nor desirable for the study team to determine which, if any, of the requested spaces might be considered "wish list" items, provided that the space requests were in line with the demographic projections and space allocation standards used in this study. Decisions about whether a library "needs" a particular feature will appropriately be made at the local level when a more thorough program analysis has been completed.

## DATA USE LIMITATIONS

This study offers a preliminary snapshot, not a finished portrait, of Utah's public library facilities. While the study team has made every effort to ensure the highest possible level of accuracy, the figures outlined here represent a gross estimate meant only to indicate the overall order of magnitude of the statewide need. Therefore, communities should be careful to avoid relying on these figures beyond the limited use for which they are intended. At the individual library level, this report can only serve as a starting point for discussion, research, and eventual definition of building projects – not as a definitive statement of needs, costs, or preferred solutions.

## THE SHORT-TERM IMPACT OF TECHNOLOGY

Early expectations that electronic information access would reduce library space needs appear unfounded. Electronic materials and online access may, in some cases, reduce the space required for general public reference materials, but will have little impact – at least within the 10-year horizon of this study – on the demand for pleasure reading and other popular materials. Few Utah public libraries have the resources to digitize special collections and specialized reference materials, or to subscribe to extensive online database services.

New space demands appear generally to offset any space gains. In many cases, increased computer services have increased, not decreased, space needs. New services, such as online access, word processing, and CD-ROM collections, require additional space for computers, printers, copiers, collections, and support.

## WISH LIST OR UNDER-ESTIMATES?

Overall, librarians have probably understated, rather than overstated, the potential extent of their needs. Library standards typically include a range of space allocations based on the status of the collection (basic, average, or growing rapidly). Few of Utah's public libraries currently have space that exceeds the median standards for an "average" collection, and many fall at or below "basic" levels, in spite of heavy usage and documented demand for expanding library services.

Utah's public librarians have a long history of "doing a lot with a little," surviving and adapting with extremely limited budgets, and answering to budget-conscious local officials. Most public library directors in this state are used to making do with whatever is available, actively weeding their collections to provide space for new materials, sharing work areas, offering multiple sessions of popular programs to accommodate the demand, sprucing up worn furnishings, and using limited office and work space for multiple functions.

Many public librarians, preoccupied with finding ways to meet growing demand with limited budgets, staffing, and facilities, have not devoted much thought either to estimating the extent of anticipated needs for the distant future or to creating a "wish list" for space that would adequately meet those needs. Aware of the limitations of community funding, most waste little time planning for a level of service that they assume is unachievable. Most, in surveys and facilities walk-throughs, had to be pressed to discuss what space they might need to fulfill their missions, rather than how they could "make do" with what they currently have.

But when the question is posed in a different way – asking, for example, how many children come to story hour or how many adults attend community planning meetings or how many computer terminals would be needed to meet the demand rather than asking whether the current space is large enough – the shortfalls become apparent. If each library were to undertake a comprehensive planning process on this basis, the estimates of space required to address deficiencies and provide for future programs and services would probably increase significantly from the levels used in this study.

## THE RANGE OF ESTIMATES

Early in the study, it became apparent that the real costs of addressing the needs of each of Utah's 107 public libraries would depend on a range of local decisions that this study team could not possibly anticipate. Therefore the decision was made to provide a range of potential costs for every library. The intent of the study is to make Utahns aware of the general magnitude of library needs, with the understanding that each community will decide individually whether to continue to "make do" or to address those needs by upgrading its existing library, adding to it, or replacing it with a new facility.

Therefore this study provides a series of figures for each library, including a range of estimates for

- **Minor Renovation:** potential costs for remodeling existing library space without undertaking major structural or mechanical system upgrades or addressing special conditions such as the preservation of a historic facility

- **Major Renovation:** potential costs for a complete upgrade of existing facilities to comply with current codes, standards, and seismic requirements. The highest figure in this category represents the level of cost that may be involved in the preservation and restoration of significant historic buildings, such as the state's remaining Carnegie libraries.

- **New Construction:** the potential cost of adding or replacing library space to meet anticipated needs, including

  ***Growth Space***: Space to provide the current level of service for the anticipated population in 2010, calculated by multiplying current area in square feet by the rate of anticipated population increase.

  ***Functional Needs Space:*** Space to remedy current deficiencies and space to accommodate new or expanded functions identified by librarians in surveys and site visits, calculated by applying standard space assignment figures to the functional needs outlined.

## WHAT THESE FIGURES DO – AND DO NOT – INCLUDE

Construction cost figures do not represent the full extent of anticipated facilities project costs. These numbers do not include the following potential costs involved in the renovation, expansion, or replacement of a library building (items in italics are discussed at greater length below):

- design fees
- contractor overhead and profit
- contingencies
- *programming, technical studies, and testing*
- *land acquisition costs*
- *moving costs*
- *interim relocation costs*
- *furnishing and equipment costs*
- *utility extension costs*
- *unusual and unanticipated conditions*
- escalation to the presumed date of construction.

**Programming, Technical Studies, and Testing**: Outside of the major urban systems, few libraries have extensive documentation of their facilities, and many have virtually none. Many have not yet developed detailed master plans or facilities programs. To undertake any extensive renovation or expansion, additional study will be required. Most libraries will want to complete planning and/or programming studies to review the options available or to evaluate the cost-effectiveness of replacement versus renovation. Depending on their circumstances and plans, they may need to obtain measured or as-built drawings, technical studies (including structural, mechanical, and electrical engineering reviews), surveys of hazardous materials, geotechnical studies, utilities availability studies, and other specialized reports. The costs of these studies, while minimal in the context of the overall building project, may represent a significant start-up cost that is likely to be underestimated.

**Property Acquisition, Moving, and Interim Relocation:** This study does not include the potential costs of acquiring additional property for expansion or new construction. Nor does it include any estimates for the costs of moving to a new facility, relocating during the construction period, or providing interim storage for library materials and collections. Likewise, it does not consider possible cost offsets that might be obtained through the re-use or sale of existing sites, equipment, and facilities.

**Furnishings and Equipment:** Study totals do not include funds for furnishings, equipment, security systems, or phone-data systems, or for conversion of materials to electronic formats. Additional costs may be incurred in the process of meeting other needs: for example, if seismic upgrading is part of a renovation, libraries should be aware that many existing shelf systems cannot be effectively braced, and thus they may need to replace existing shelving, even if it is comparatively new and in good condition, to be able to provide seismic stability.

**Utility Extension Costs**: Outside of major urban areas, few libraries have data about the location, availability, and capacity of site utilities. Extending new water or gas lines, developing new sewers, providing additional electrical capacity, and addressing storm drainage may involve major costs not included in these estimates.

**Unusual and Unanticipated Conditions:** Special allowances may be required for significant seismic upgrading, major remediation of hazardous materials such as asbestos, lead paint, and PCBs (known or presumed present in many of these facilities), special soil and site problems, and other unusual conditions that cannot be precisely identified in a brief walk-through.

## OTHER COST VARIABLES AND RISKS

Costs directly related to the design and construction process are not the only expenses a library will incur in tackling a major building project. Addressing space deficits alone will not be adequate to enable our libraries to meet 21st century needs. A new computer lab is, after all, of little use if the library lacks computers and has no staff available to supervise it. As each library approaches any major construction or renovation project, it should identify the impact of the project on its staffing, operations, and budget.

**Staffing and Operations:** Providing additional space without the staff to supervise it or the operating budget to maintain it will not resolve library needs. In turn, the additional staff required to manage a larger operation to support new or expanded services may increase space requirements. Overall budgets may also need to include the cost of additional equipment and library material for new or expanded facilities.

**Local Cost Variables:** Actual construction costs may vary – perhaps significantly – from community to community and project to project. Factors that may require an adjustment to projected construction costs include the type and quality of construction, the materials selected, additional distance and expense in remote sites, special requirements and design standards established by local jurisdictions, and the local construction climate at the time of construction.

**Inflation**: This study does not include projections for inflation to the date of construction. All costs are in 2001 dollars.

**The Pent-Up Demand Factor**: Every librarian responsible for a new or significantly expanded library who responded to questions about changes after expansion has reported a significant increase in usage levels that was not predicted by demographic change. A survey of libraries completed during the study period reflects the large potential demand for additional library services and resources in many communities. When facilities are made available to support those services, library use increases, often at a dramatic rate, and that growth appears to be sustained months and years after the opening of new or expanded facilities. Many libraries report interest in programs or collection items that cannot currently be offered because of facility limitations, as well as additional demand for existing programs and services.

As Gerard McCabe explains, “It is difficult to forecast a precise increase in service demand as a result of a building renovation or construction of a new building. Experience suggests planning on a minimal increase of at least 20 percent in service activity for a renovation project, and for a new building, an increase as high as 33 percent. If the situation with the previous building was one of very acute severity due to

small space, overcrowding, etc., the service demands could double."[37]

In addition, as McCabe points out, the activity of library building itself may increase demand by involving local residents in fund-raising and generating publicity about library services. And a successful building project will further increase usage. "In a geographic area where other libraries are considered deficient by their primary clientele, an increase in demand can occur as users migrate to the newer or improved facility . . . as better accommodations, improved lighting, and other amenities bring in users who eschewed the old building."[38]

While the data on pent-up demand from this study are not statistically significant, they underline the importance of considering the potential impact of pent-up demand on a community-by-community basis. They also suggest that resulting increases may be even larger than planners have predicted: at the new Tooele City library, for example, circulation tripled when the building opened.

**Changing Demographics:** Particularly in rapidly growing areas, changing demographics may also affect library needs. Where population growth alters the composition of the community, a library may need to re-examine its services and plans. A large influx of school-age children, for example, may significantly increase the need for children's collections and program space. Likewise, if a high-tech industry draws large numbers of former urban residents to a rural area, it may change patrons' expectations about the types and levels of services the library should provide. Many Utah communities have experienced a growth in Hispanic-speaking populations, which has generated increased interest in Spanish-language collections, literacy programs, and tutoring.